PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUT	HORITY		MISI
То:			PCT PCT
	1 -		RITTEN OPINION OF THE FIONAL SEARCHING AUTHORITY
			(PCT Rule 43bis.1)
		Date of mailing (day/month/year)	
Applicant's or agent's file reference JSONY-662PCT		FOR FURTHER	ACTION See paragraph 2 below
International application No.	International filing date	(day/month/year)	Priority date (day/month/year)
PCT/JP2005/001867	02.02.2005		18.03.2004
International Patent Classification (IPC) or	r both national classification a	nd IPC	
Applicant SONY CORPORATION			
This opinion contains indication:	s relating to the following item	ns:	
Box No. I Basis o	of the opinion		
Box No. II Priority	y		
	stablishment of opinion with re	egard to novelty, invent	tive step and industrial applicability
	f unity of invention		
	ned statement under Rule 43 <i>bis</i> ability; citations and explanation		novelty, inventive step or industrial tement
Box No. VI Certair	documents cited		
Box No. VII Certair	n defects in the international ap	pplication	
Box No. VIII Certain	observations on the internation	onal application	
2. FURTHER ACTION			•
International Preliminary Exami	ning Authority ("IPEA") exce d the chosen IPEA has notifie	pt that this does not ap d the International Bu	ill be considered to be a written opinion of the ply where the applicant chooses an Authority other reau under Rule 66.1 bis(b) that written opinions of
	ppropriate, with amendments	, before the expiration	A, the applicant is invited to submit to the IPEA and of 3 months from the date of mailing of Form expires later.
For further options, see Form PC	Т/ISA/220.		
3. For further details, see notes to F	Form PCT/ISA/220.		
Name and mailing address of the ISA/JP	· · · · · · · · · · · · · · · · · · ·	Authorized officer	
Facsimile No.		Telephone No.	

Box	x No. I Basis of this opinion
1.	With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
	This opinion has been established on the basis of a translation from the original language into the following language
	, which is the language of a translation furnished for the purposes of international search (under
	Rule 12.3 and 23.1(b)).
2.	With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
	a. type of material
	a sequence listing
	table(s) related to the sequence listing
	b. format of material
	in written format
	in computer readable form
	c. time of filing/furnishing
	contained in the international application as filed.
	filed together with the international application in computer readable form.
	furnished subsequently to this Authority for the purposes of search.
3.	In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	Additional comments:
	·
l	

	·	
Box	No. IV Lack of unity of invention	
1.	In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant	has:
	paid additional fees	
	paid additional fees under protest	
	not paid additional fees	
2.	This Authority found that the requirement of unity of invention is not complied wandditional fees.	th and chose not to invite the applicant to pay
3.	This Authority considers that the requirement of unity of invention in accordance with Rule	s 13.1, 13.2 and 13.3 is
	complied with	
	not complied with for the following reasons:	,
	The technical feature common to all subject matters of frequency of the vibrating body to cause the gas to be discharge vibrations of the vibrating body in such a manner that the sour discharged, cancel each other out.	ged as a pulsating flow by the
	However, in this technical feature, the technique of capulsating flow by the vibrations of the vibrating body in such a produced when gas is discharged cancel each other out, is disc (Pioneer Corp.), 04, August, 1980 (04.08.80), full text, Figs. 1 controlling the frequency of the vibrating body is obvious.	a manner that the sound waves losed in JP, 55-101800, A
	Therefore, the technical feature common to all subject appear to disclose a contribution to prior art technique. So, the to be a "special technical feature" described in the second sent	s technical feature is not deemed
	Therefore, the subject matters of "claims 1-2, 7-10 and "claims 1 and 11-12", "claims 1, 15-17 and 19", "claims 1, 18 "claim 24" and "claim 25" do not satisfy the requirement of un	and 20", "claims 1 and 21-23",
4.	Consequently, this opinion has been established in respect of the following parts of the inter-	national application:
	all parts	
	the parts relating to claims Nos. 1-2, 7-10, 13-14	

International application No.
PCT/JP2005/001867

Box			ne 43018.1(a)(i) with regard to novelty, inventive step or industrial applicability; pporting such statement	
1.	Statement			
	Novelty (N)	Claims	2, 7-10, 13-14	YES
		Claims	1	NO
	Inventive step (IS)	Claims	7-10, 13-14	YES
		Claims	1-2	NO
	Industrial applicability (IA)	Claims	1-2, 7-10, 13-14	YES
		Claims		NO

2. Citations and explanations:

Document 1: JP, 55-101800, A (Pioneer Electronic Corp.), 04 August, 1980 (04.08.80)

Document 2: JP, 10-47254, A (Yugen Kaisha Guppi), 17 February, 1998 (17.02.98)

Document 3: JP, 2001-355574, A (Matsushita Electric Industrial Co., Ltd.), 26 December, 2001 (26.12.01)

Document 4: CD-ROM of the specification and drawings annexed to the written application of Japanese Utility Model Application No. 48851/1992 (Laid-open No. 22582/1994) (Nakasa Co., Ltd.), 25 March, 1994 (25.03.94)

The subject matter of claim 1 does not appear to be novel or to involve an inventive step since this subject matter is disclosed in document 1 or 2 cited in the ISR.

Document 1 discloses a gas discharge device comprising a vibrating body (14) and discharge parts (11a, 12a) for discharging a gas as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged, cancel each other out.

Although document 1 does not specifically describe a control means for controlling the frequency of the vibrating body, there is the description "driving of the driver unit is always performed at \pm 30% of the resonance frequency" in document 1 (page 2, upper-left column line 20 to upper-right column, line 1): Therefore, it is recognized that an indication of controlling the frequency of the vibrating body is described in document 1. Further, a technique of controlling the frequency of a vibrating body is obvious to a person skilled in the art.

Document 2 discloses a gas discharge device comprising vibrating bodies (16, 16) and discharge parts (15b, 15b) for discharging a gas as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged, cancel each other out. Although document 2 does not specifically describe a control means for controlling the frequency of the vibrating body, a technique of controlling the frequency of a vibrating body is obvious to a person skilled in the art.

The subject matter of claim 2 does not appear to involve an inventive step in view of documents 1-3 cited in the ISR.

It is well-known technique to control the amplitude of a vibrating body for discharging a gas as described in document 3 (paragraphs [0031]-[0032]). Therefore, a person skilled in the art could

International application No.
PCT/JP2005/001867

Box No. V

Reasoned statement under Rule 43bls.1(a)(l) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

have easily conceived of controlling the amplitude of the vibrating body of the gas discharge device described in documents 1 and 2.

The subject matters of claims 7 and 8 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Particularly, a technique in which the frequency of the vibrating body is controlled below 100 Hz and the amplitude of the vibrating body is controlled between 1 and 3 mm if the area of the vibrating body is less than 70,000 mm² is not described or indicated in any of the documents.

The subject matters of claims 9 and 10 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Especially, a technique in which the frequency of the vibrating body is controlled below 35 Hz and the amplitude of the vibrating body is controlled between 1 and 5 mm if the area of the vibrating body is less than 70,000 mm² is not described or indicated in any of the documents.

The subject matters of claims 13 and 14 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Especially, a technique in which A×B×C is between 100,000 and 10,000,000 mm³/s wherein A is the frequency of the vibrating body (Hz), B is the amplitude of the vibrating body (mm) and C is the area of the vibrating body (mm²) is not described or indicated in any of the documents.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHOR	RITY		MNC.
То:			PCT PCT
			RITTEN OPINION OF THE IONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)
		Date of mailing (day/month/year)	
Applicant's or agent's file reference JSONY-662PCT		FOR FURTHER	ACTION See paragraph 2 below
International application No. PCT/JP2005/001867	International filing date (day/month/year)	Priority date (day/month/year) 18.03.2004
International Patent Classification (IPC) or bot Applicant SONY CORPORATION	h national classification and	d iPC	
This opinion contains indications relations.			
Box No. IV Lack of uni Box No. V Reasoned si applicability Box No. VI Certain doc Box No. VII Certain deferment of the certain obs 2. FURTHER ACTION If a demand for international preliminary Examining than this one to be the IPEA and the this International Searching Authority If this opinion is, as provided above	shment of opinion with regity of invention latement under Rule 43bis. It is citations and explanation uments cited exts in the international appearations on the internation minary examination is manufactured in the internation of the internation of the internation is manufactured. It is considered to be a written priate, with amendments, and 22 months from the principal considered in the pri	gard to novelty, invention 1(a)(i) with regard to a supporting such state of the supporting such states supporting supporting supporting supporting supporting such states supporting s	Il be considered to be a written opinion of the oly where the applicant chooses an Authority other eau under Rule 66.1 bis(b) that written opinions of a, the applicant is invited to submit to the IPEA a of 3 months from the date of mailing of Form
Name and mailing address of the ISA/JP	-	Authorized officer	
Facsimile No.		Telephone No.	

Box	No. I	Basis of this opinion
1.		regard to the language, this opinion has been established on the basis of the international application in the language in which it was unless otherwise indicated under this item.
		This opinion has been established on the basis of a translation from the original language into the following language
	_	, which is the language of a translation furnished for the purposes of international search (under
		Rule 12.3 and 23.1(b)).
2.		regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed tion, this opinion has been established on the basis of:
	a.	type of material
		a sequence listing
		table(s) related to the sequence listing
	b.	format of material
		in written format
		in computer readable form
	c.	time of filing/furnishing
		contained in the international application as filed.
	Ì	filed together with the international application in computer readable form.
		furnished subsequently to this Authority for the purposes of search.
3.	Ш	In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	Addit	tional comments:
		•

Box	No. I	V Lack of unity of invention
1.		In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
		paid additional fees
		paid additional fees under protest
		not paid additional fees
2.		This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3.	This	Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
		complied with
	\boxtimes	not complied with for the following reasons:
		The technical feature common to all subject matters of claims 1-25 is controlling the frequency of the vibrating body to cause the gas to be discharged as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged, cancel each other out.
		However, in this technical feature, the technique of causing the gas to be discharged as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged cancel each other out, is disclosed in JP, 55-101800, A (Pioneer Corp.), 04, August, 1980 (04.08.80), full text, Figs. 1-4, and the technique of controlling the frequency of the vibrating body is obvious.
		Therefore, the technical feature common to all subject matters of claims 1-25 does not appear to disclose a contribution to prior art technique. So, this technical feature is not deemed to be a "special technical feature" described in the second sentence of PCT rule 13.2.
		Therefore, the subject matters of "claims 1-2, 7-10 and 13-14", "claims 1 and 3-6", "claims 1 and 11-12", "claims 1, 15-17 and 19", "claims 1, 18 and 20", "claims 1 and 21-23", "claim 24" and "claim 25" do not satisfy the requirement of unity of invention.
4.	Con	sequently, this opinion has been established in respect of the following parts of the international application:
		all parts
	\boxtimes	the parts relating to claims Nos. 1-2, 7-10, 13-14

International application No.
PCT/JP2005/001867

Вох			ile 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; porting such statement	_
1.	Statement			
	Novelty (N)	Claims	2, 7-10, 13-14	YES
		Claims	1 .	NO
	Inventive step (IS)	Claims	7-10, 13-14	YES
		Claims	1-2	NO
	Industrial applicability (IA)	Claims	1-2, 7-10, 13-14	YES
		Claims		NO

2. Citations and explanations:

Document 1: JP, 55-101800, A (Pioneer Electronic Corp.), 04 August, 1980 (04.08.80)

Document 2: JP, 10-47254, A (Yugen Kaisha Guppi), 17 February, 1998 (17.02.98)

Document 3: JP, 2001-355574, A (Matsushita Electric Industrial Co., Ltd.), 26 December, 2001 (26.12.01)

Document 4: CD-ROM of the specification and drawings annexed to the written application of Japanese Utility Model Application No. 48851/1992 (Laid-open No. 22582/1994) (Nakasa Co., Ltd.), 25 March, 1994 (25.03.94)

The subject matter of claim 1 does not appear to be novel or to involve an inventive step since this subject matter is disclosed in document 1 or 2 cited in the ISR.

Document 1 discloses a gas discharge device comprising a vibrating body (14) and discharge parts (11a, 12a) for discharging a gas as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged, cancel each other out.

Although document 1 does not specifically describe a control means for controlling the frequency of the vibrating body, there is the description "driving of the driver unit is always performed at \pm 30% of the resonance frequency" in document 1 (page 2, upper-left column line 20 to upper-right column, line 1). Therefore, it is recognized that an indication of controlling the frequency of the vibrating body is described in document 1. Further, a technique of controlling the frequency of a vibrating body is obvious to a person skilled in the art.

Document 2 discloses a gas discharge device comprising vibrating bodies (16, 16) and discharge parts (15b, 15b) for discharging a gas as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged, cancel each other out. Although document 2 does not specifically describe a control means for controlling the frequency of the vibrating body, a technique of controlling the frequency of a vibrating body is obvious to a person skilled in the art.

The subject matter of claim 2 does not appear to involve an inventive step in view of documents 1-3 cited in the ISR.

It is well-known technique to control the amplitude of a vibrating body for discharging a gas as described in document 3 (paragraphs [0031]-[0032]). Therefore, a person skilled in the art could

International application No.
PCT/JP2005/001867

Box No. V

Reasoned statement under Rule 43bls.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

have easily conceived of controlling the amplitude of the vibrating body of the gas discharge device described in documents 1 and 2.

The subject matters of claims 7 and 8 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Particularly, a technique in which the frequency of the vibrating body is controlled below 100 Hz and the amplitude of the vibrating body is controlled between 1 and 3 mm if the area of the vibrating body is less than 70,000 mm² is not described or indicated in any of the documents.

The subject matters of claims 9 and 10 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Especially, a technique in which the frequency of the vibrating body is controlled below 35 Hz and the amplitude of the vibrating body is controlled between 1 and 5 mm if the area of the vibrating body is less than 70,000 mm² is not described or indicated in any of the documents.

The subject matters of claims 13 and 14 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Especially, a technique in which A×B×C is between 100,000 and 10,000,000 mm³/s wherein A is the frequency of the vibrating body (Hz), B is the amplitude of the vibrating body (mm) and C is the area of the vibrating body (mm²) is not described or indicated in any of the documents.

PATENT COOPERATION TREATY

From the INTERNA	ΓΙΟΝΑL SEARCHING AUTHOR	RITY		NSI
То:			•	PCT PCT
		·		RITTEN OPINION OF THE IONAL SEARCHING AUTHORITY
				(PCT Rule 43bis.1)
			Date of mailing (day/month/year)	
Applicant's	or agent's file reference	•	FOR FURTHER	ACTION
JSON	Y-662PCT			See paragraph 2 below
Internation	al application No.	International filing date	(day/month/year)	Priority date (day/month/year)
PCT/	JP2005/001867	02.02.2005		18.03.2004
Applicant SONY	CORPORATION			
1. T	his opinion contains indications related Box No. I Basis of the Box No. II Priority Box No. III Non-establi	opinion		ive step and industrial applicability
	Box No. IV Lack of uni Box No. V Reasoned s	ty of invention		
	Box No. V Reasoned s applicabilit	atement under Rule 43 <i>bis</i> y; citations and explanatio		novelty, inventive step or industrial tement
<u> </u>	Box No. VI Certain doc	uments cited		
L	Box No. VII Certain defe	ects in the international ap	plication	
L.	Box No. VIII Certain obs	ervations on the internatio	nal application	
If Ir th th W P	nternational Preliminary Examining nan this one to be the IPEA and the nis International Searching Authority this opinion is, as provided above	Authority ("IPEA") except chosen IPEA has notified will not be so considered a considered to be a written with amendments, and 22 months from the prior to the pr	ot that this does not ap I the International Bur I. In opinion of the IPEA before the expiration	Il be considered to be a written opinion of the ply where the applicant chooses an Authority other eau under Rule 66.1bis(b) that written opinions of A, the applicant is invited to submit to the IPEA at of 3 months from the date of mailing of Form expires later.
3. F	or further details, see notes to Form	PCT/ISA/220.		
Name and	mailing address of the ISA/JP		Authorized officer	
	·			
Facsimile N	lo.		Telephone No.	

Во	x No. I	Basis of this opinion
1.		regard to the language, this opinion has been established on the basis of the international application in the language in which it was unless otherwise indicated under this item.
		This opinion has been established on the basis of a translation from the original language into the following language
	-	, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2.		regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed ation, this opinion has been established on the basis of:
	a.	type of material
		a sequence listing
		table(s) related to the sequence listing
	b.	format of material
		in written format
		in computer readable form
	c.	time of filing/furnishing
		contained in the international application as filed.
		filed together with the international application in computer readable form.
		furnished subsequently to this Authority for the purposes of search.
3.		In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4.	Addi	tional comments:
		•
	•	

Box No. I	V Lack of unity of invention
i. 🔲	In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
	paid additional fees
	paid additional fees under protest
	not paid additional fees
2.	This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This	Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is
	complied with
\boxtimes	not complied with for the following reasons:
	The technical feature common to all subject matters of claims 1-25 is controlling the frequency of the vibrating body to cause the gas to be discharged as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged, cancel each other out.
	However, in this technical feature, the technique of causing the gas to be discharged as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged cancel each other out, is disclosed in JP, 55-101800, A (Pioneer Corp.), 04, August, 1980 (04.08.80), full text, Figs. 1-4, and the technique of controlling the frequency of the vibrating body is obvious.
	Therefore, the technical feature common to all subject matters of claims 1-25 does not appear to disclose a contribution to prior art technique. So, this technical feature is not deemed to be a "special technical feature" described in the second sentence of PCT rule 13.2.
	Therefore, the subject matters of "claims 1-2, 7-10 and 13-14", "claims 1 and 3-6", "claims 1 and 11-12", "claims 1, 15-17 and 19", "claims 1, 18 and 20", "claims 1 and 21-23", "claim 24" and "claim 25" do not satisfy the requirement of unity of invention.
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	all parts
\boxtimes	the parts relating to claims Nos. 1-2, 7-10, 13-14

International application No.
PCT/JP2005/001867

Box	No. V			ale 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; pporting such statement	
1.	Statement				
	Novelty	(N)	Claims	2, 7-10, 13-14	YES
			Claims	<u>1</u> ·	NO
	Inventive	e step (IS)	Claims	7-10, 13-14	YES
			Claims	1-2	NO
	Industria	l applicability (IA)	Claims	1-2, 7-10, 13-14	YES
			Claims		NO

2. Citations and explanations:

Document 1: JP, 55-101800, A (Pioneer Electronic Corp.), 04 August, 1980 (04.08.80)

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The subject matter of claim 1 does not appear to be novel or to involve an inventive step since this subject matter is disclosed in document 1 or 2 cited in the ISR.

Document 1 discloses a gas discharge device comprising a vibrating body (14) and discharge parts (11a, 12a) for discharging a gas as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged, cancel each other out.

Although document 1 does not specifically describe a control means for controlling the frequency of the vibrating body, there is the description "driving of the driver unit is always performed at \pm 30% of the resonance frequency" in document 1 (page 2, upper-left column line 20 to upper-right column, line 1). Therefore, it is recognized that an indication of controlling the frequency of the vibrating body is described in document 1. Further, a technique of controlling the frequency of a vibrating body is obvious to a person skilled in the art.

Document 2 discloses a gas discharge device comprising vibrating bodies (16, 16) and discharge parts (15b, 15b) for discharging a gas as a pulsating flow by the vibrations of the vibrating body in such a manner that the sound waves produced when gas is discharged, cancel each other out. Although document 2 does not specifically describe a control means for controlling the frequency of the vibrating body, a technique of controlling the frequency of a vibrating body is obvious to a person skilled in the art.

The subject matter of claim 2 does not appear to involve an inventive step in view of documents 1-3 cited in the ISR.

It is well-known technique to control the amplitude of a vibrating body for discharging a gas as described in document 3 (paragraphs [0031]-[0032]). Therefore, a person skilled in the art could

International application No.
PCT/JP2005/001867

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

have easily conceived of controlling the amplitude of the vibrating body of the gas discharge device described in documents 1 and 2.

The subject matters of claims 7 and 8 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Particularly, a technique in which the frequency of the vibrating body is controlled below 100 Hz and the amplitude of the vibrating body is controlled between 1 and 3 mm if the area of the vibrating body is less than 70,000 mm² is not described or indicated in any of the documents.

The subject matters of claims 9 and 10 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Especially, a technique in which the frequency of the vibrating body is controlled below 35 Hz and the amplitude of the vibrating body is controlled between 1 and 5 mm if the area of the vibrating body is less than 70,000 mm² is not described or indicated in any of the documents.

The subject matters of claims 13 and 14 appear to be novel and to involve an inventive step because these matters are not described in any of the documents cited in the ISR. Especially, a technique in which A×B×C is between 100,000 and 10,000,000 mm³/s wherein A is the frequency of the vibrating body (Hz), B is the amplitude of the vibrating body (mm) and C is the area of the vibrating body (mm²) is not described or indicated in any of the documents.